

WHAT IS CLAIMED IS:

1. A cartridge type soldering iron assembly, comprising:
 - a sleeve having a proximal end and a distal end, the proximal end adapted to couple to a connector and the distal end adapted to couple to a tip; and
 - a handle having an opening, extending axially therethrough being dimensioned to fit over a portion of the sleeve.
- 2 A cartridge type soldering iron according to claim 1 further including an insulator to be positioned between the sleeve and the handle.
3. A cartridge type soldering iron according to claim 1, wherein the proximal end of the sleeve is adapted to couple to a connector end having electrical contact surface areas.
4. A cartridge type soldering iron according to claim 3, wherein the connector has a receptacle opening having contact fingers adapted to electrically couple to the electrical contact surface areas of the connector end of the cartridge.
5. A cartridge type soldering iron according to claim 3, further including an electrical heating element within the sleeve and electrically coupled to the electrical contact surface areas of the connector end to convert electrical energy into heat, thereby providing heat to the tip.
6. A cartridge type soldering iron according to claim 1 wherein the handle is made of multi-layers.
7. A cartridge type soldering iron according to claim 1, wherein the insulator has a hole, wherein within the hole of the insulator is a tooth, the sleeve having a notch at a predetermined location adapted to receive the tooth, wherein when the sleeve is inserted through the hole of the insulator and the tooth engages the notch, the sleeve is releasably locked into place relative to the insulator in the first position.
8. A cartridge type soldering iron according to claim 1, wherein the insulator has a proximal end and a distal end and the proximal end of the insulator is adjacent to the proximal end of

the sleeve, the insulator having a ring at a predetermined distance from the proximal end of the insulator.

9. A cartridge type soldering iron according to claim 1, wherein the handle has a length, the length of the handle being substantially similar to the predetermined distance between the ring and the proximal end of the insulator.

10. A cartridge type soldering iron according to claim 1, wherein the handle is between the ring and the proximal end of the insulator.

11. A cartridge type soldering iron according to claim 8, wherein the ring is temperature sensitive and changes its color based on changes in temperature.

12. A cartridge type soldering iron according to claim 1, wherein the handle is made of carbon impregnated foam material for static discharging.

13. A cartridge type soldering iron according to claim 1, wherein the handle is releasable from the insulator.

14. A cartridge type soldering iron according to claim 1, wherein the cross sectional area of the sleeve is cylindrical.

15. A cartridge type soldering iron according to claim 1, wherein:
the sleeve has a ring at a predetermined position along a longitudinal axis of the sleeve;
the handle having a proximal portion and a distal portion;
wherein the distal portion has a bore adapted to receive the ring on the sleeve.

16. A cartridge type soldering iron according to claim 3, wherein the connector has a core that forms an acute angle relative to a longitudinal axis of the sleeve.

17. A cartridge type soldering iron according to claim 16, wherein the acute angle is about 45°.

18. A cartridge type soldering iron according to claim 3, wherein the connector has a core forming approximately 90° relative to a longitudinal axis of the sleeve.

19. A cartridge type soldering iron, comprising:

- a sleeve having an electrical contact portion and a tip portion, the electrical contact portion adapted to releasably couple to a receptacle within a connector;
- an insulator having an opening adapted to receive the sleeve, the insulator between the tip and electrical contact portions;
- a ring around the insulator at a predetermined distance from the electrical contact portion; and
- a handle having a hole adapted to receive the insulator, wherein the handle is between the ring and the electrical contact portion;
- wherein once the electrical contact portion of the sleeve is inserted into the receptacle within the connector the insulator and the handle are flush against the connector.

20. A cartridge type soldering iron according to claim 19, wherein the ring is temperature sensitive to indicate the temperature of the cartridge type soldering iron.

21. A cartridge type soldering iron according to claim 19, wherein the handle is releasable from the insulator.

22. A cartridge type soldering iron, comprising:

- a sleeve having a proximal end and a distal end, the proximal end adapted to couple to a connector and the distal end adapted to couple to a tip; and
- a handle having a hole therethrough, the sleeve releasably within the hole of the handle between the proximal and distal ends of the sleeve defining a first position.

23. A cartridge type soldering iron according to claim 22, wherein the cross-section of the hole of the handle is substantially similar to the cross-section of the sleeve, thereby the sleeve firmly fits within the hole of the handle.

24. A cartridge type soldering iron according to claim 22, wherein the cross-section of the sleeve is circular.

25. A cartridge type soldering iron according to claim 22, wherein at least a portion of the sleeve does not contact the inner wall of the hole of the handle thereby forming an air passage between the sleeve and the handle.

26. A cartridge type soldering iron according to claim 22, wherein within the hole of the handle is a tooth, the sleeve having a notch at a predetermined location adapted to receive the tooth, wherein when the sleeve is inserted through the hole of the handle and the tooth engages the notch, the sleeve is releasably locked into place relative to the handle at the first position.

27. A cartridge type soldering iron according to claim 22, wherein:
the sleeve has a ring at a predetermined position along a longitudinal axis of the sleeve;
the handle having a proximal portion and a distal portion;
wherein the distal portion has a bore adapted to receive the ring on the sleeve.

28. A method for assembling a cartridge type soldering iron, comprising:
inserting a sleeve through an opening within an insulator so that the insulator is between a proximal end and a distal end of the sleeve, the proximal end of the sleeve having electrical contact surface areas;
inserting the insulator through a hole within a handle so that the handle is between the proximal and distal ends of the sleeve;
electrically connecting the proximal end of the sleeve to a connector; and
coupling a tip to the distal end of the sleeve.

29. A method according to claim 28, further comprising:
inserting the insulator through a ring at a predetermined distance from a proximal end of the insulator, wherein the proximal end of the insulator is adjacent to the proximal end of the sleeve.

30. A method according to claim 29, wherein the handle has a length, the length of the handle being substantially similar to the predetermined distance between the ring and the proximal end of the insulator.

31. A method according to claim 29, wherein the handle is between the ring and the proximal end of the insulator.

32. A method according to claim 28, wherein the receptacle has contact fingers adapted to electrically couple to the electrical contact surface areas of the sleeve.

33. A method according to claim 28, further comprising:

releasably locking the sleeve at a predetermined position on the sleeve by providing a notch on the sleeve adapted to receive a tooth within the opening of the insulator.

34. A method according to claim 28, further comprising:

changing the color of the ring to indicate an approximate temperature of the tip.

35. A method according to claim 28, further comprising:

discharging the static in the handle.

36. A method according to claim 28, further comprising

replacing the handle to better fit a particular user.

37. A method according to claim 28, wherein each of the insulator and the handle has a proximal end, wherein the proximal ends of the insulator and the handle are flush.

38. A method according to claim 37, wherein the proximal ends of the insulator and the handle are flush against the connector once the proximal end of the sleeve is fully inserted into the receptacle of the connector.

39. A method for replacing a handle of a cartridge type soldering iron to fit a particular user, comprising:

picking a first handle that fits a first user;

inserting a sleeve through an opening within the first handle so that the first handle is releasably between the proximal and distal ends of the sleeve;
electrically connecting the proximal end of the sleeve to a connector; and
coupling a tip to the distal end of the sleeve.

40. A method according to claim 39, further comprising:
removing an existing handle on the sleeve, if any.

41. A method according to claim 39, further comprising:
removing the first handle;
picking a second handle for a second user; and
inserting the sleeve through an opening within the second handle so that the second handle is between the proximal and distal ends of the sleeve.

42. A method according to claim 39, further comprising:
providing an insulator between the sleeve and the first handle.

43. A method according to claim 39, further comprising:
inserting the proximal end of the sleeve through a bore formed within the first handle;
stopping the first handle at a predetermined position along a longitudinal axis of the sleeve.